

PERFORMANCE-BASED REHABILITATION AND MAINTENANCE FOR THE DISTRICT OF COLUMBIA'S NATIONAL HIGHWAY SYSTEM

Introduction

The DC Streets project, an experimental project undertaken by the District of Columbia Department of Transportation (DDOT) and the Federal Highway Administration (FHWA) over the past five years, entails a private contractor maintaining over 75 miles of the National Highway System (NHS) in D.C. (Figure 1).

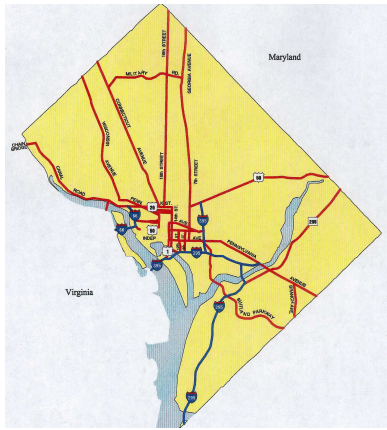


Figure 1 NHS roadways

This \$70 million federal-aid project is the first urban, performance-based asset preservation effort of its kind in the United States. It is also the largest, single transportation investment in DDOT's history. Performance-based asset preservation aims to rehabilitate and maintain roadway, roadside, bridge, and tunnel assets, while reducing overall rehabilitation and maintenance costs by encouraging innovative solutions.

History

The contract includes the preservation and maintenance of all transportation infrastructure assets, right-of-way to right-of-way, with the exception of traffic signals.

Specifically, the following maintenance categories are included: pavement structures, roadway cleaning, drainage, roadside, traffic safety (guiderail, barriers, attenuators, pavement markings, signs, lighting), roadside cleaning, roadside vegetation, bridges, tunnels, pedestrian bridges, weigh-in-motion stations, and snow and ice control.

The contractor was tasked with preserving and maintaining the assets at or above a specified condition. This arrangement promotes efficiency, optimization of resources, and innovation; it transfers the risk from the owner agency to the contractor. The contractor freely selects the methods, materials, and techniques that will best meet the performance standards developed for this project. However, materials must meet DDOT's standard specifications, unless an exception is approved. This ensures that the resulting work is of acceptable quality and longevity.

The basis of any performance-based contract is the set of performance measures. Because the DC Streets contract was the first of its kind in an urban area, many of the performance measures were developed from scratch. A number of measures were available from an earlier performance-based maintenance effort in Virginia, but these were aimed at a rural Interstate system. The Science Applications International Corporation (SAIC) consultant team worked closely with DDOT and FHWA to develop new measures or find and adjust existing measures to suit the urban environment.

Management

Performance is measured on a daily, monthly, and annual basis. Daily

performance is measured in the field by DDOT and the contractor. Staff members of each organization are in the field every day noting deficient areas, and the contractor maintains a daily work log for the project. The monthly review is a subjective windshield survey, while the annual review is an objective engineering evaluation of performance under the contract.

The subjective monthly reviews with regular raters are critical since they measure how the project partners feel about the project's status and success. The reviews provide a recurrent, overall snapshot of the system's condition (Figure 2).

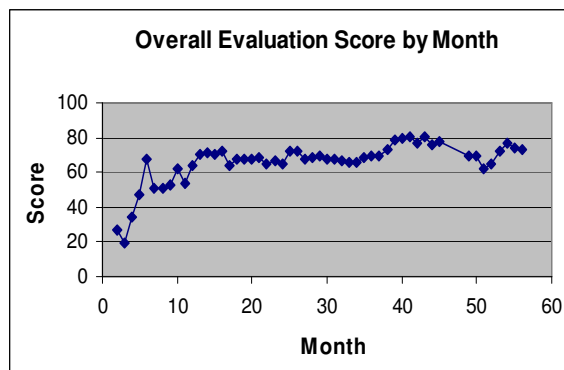


Figure 2 Monthly evaluation results

The annual evaluation provides an objective engineering assessment (expectations do not change with time) of the condition of the assets against the performance standards. Teams of subject matter experts rate the assets on randomly selected sample segments during the evaluation. The annual evaluations provide an indication of contractor performance and project success.

Outcomes

The DC Streets project has allowed DDOT to allocate its in-house maintenance resources to local neighborhood streets in addition to providing great lessons in performance based contracting. The effort

has also created local small business contractors and increased residents' opportunities for employment.

Practical solutions have been designed to address the challenges on the DC Streets project. The project partners use numerous innovative products and technologies, namely the Web Portal (Figure 3) for project coordination across agencies, the Tracker Database for asset deficiency tracking and innovative sampling and data collection; both provide mechanisms for timely response to asset management issues.



Figure 3 The DC NHS Web Portal

Future Opportunities

DDOT will continue using performance-based asset preservation contracts after the DC Streets effort, given their value in keeping assets at or above their current condition. The agency is expanding the application of the concept District-wide for assets, such as lighting and tunnels.



*Mesfin Lakew, DDOT Chief of Asset Management Division
202.671.4682
mesfin.lakew@dc.gov*